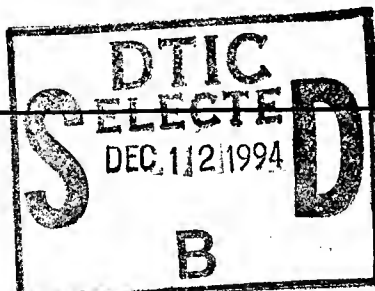
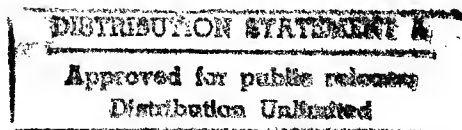


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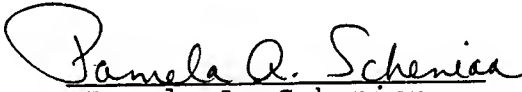
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A Phase I Archaeological Survey  
of Proposed Borrow Areas at Tow Dragon Range  
on the Fort Knox Military Reservation,  
Hardin County, Kentucky

by  
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August 1994

  
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# ABSTRACT

In June, 1994 the Fort Knox Assistant Staff Archaeologist and technical assistant conducted a Phase I archaeological survey of two areas proposed for use as topsoil borrow areas at the Tow Dragon Range (which total 10.2 ha or 25.2 acres in size) on the Fort Knox Military Reservation, Hardin County, Kentucky. The survey resulted in the discovery of one isolated find of prehistoric archaeological material and one chert flake of questionable cultural affiliation. Isolated finds are not eligible for the National Register. No additional archaeological work is recommended in the project areas, and it is recommended that the borrowing operations be conducted as proposed.

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## MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations, a Phase I archaeological study was conducted of two proposed topsoil borrow areas at the Tow Dragon Range on the Fort Knox Military Reservation, Hardin County, Kentucky. Two prehistoric isolated finds were recovered in the survey of the proposed borrow areas. Isolated finds are not eligible for the National Register of Historic Places, and no additional archeological work is recommended in the proposed borrow areas. It is recommended that the borrow areas be used as proposed.

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## I. INTRODUCTION

In June, 1994, the staff of the Cultural Resource Management Branch of the Directorate of Public Works of Fort Knox performed a Phase I archaeological survey of two proposed topsoil borrow areas at the Tow Dragon Range at Fort Knox, Hardin County, Kentucky (Figures 1 and B-1). The project area is located in Training Area 11 of the installation. The plan view of the proposed borrow areas and the survey transects and associated shovel probes are shown in Figure B-2. The survey area comprised a square plot of land, approximately 18.8 acres (7.6 ha) in size, to the south of the berm and a triangular piece of land, approximately 6.4 acres (2.6 ha) in size, to the north and west of the berm.

During July and August, 1993, the Fort Knox Staff Archaeologist obtained all the documents necessary to perform Phase I literature searches for the installation (e.g., state site forms, reports of previous investigations, historical documents). Therefore, no file check was made with the Office of State Archaeology and the Kentucky Heritage Council specifically for this project.

A literature search revealed that the project area had not been previously surveyed, therefore, during the present project the entire area was walked. Shovel probes were excavated at selected locations to supplement the walkover data.

The proposed borrow areas are located in the Plain section of the Pennyryle cultural landscape. Elevations in the project area range from 760 to 770 feet. Soils are classified as Crider-Vertrees-Nicholson soil association (Arms et al. 1979: General Soil Map). Drainage in the area is limited to a very shallow seasonal runnel north of the south block, possibly fed by a spring adjacent to Isolated Find #2.

The archaeological survey was conducted in preparation for removal of borrow dirt from two areas for use in construction. The archaeological survey and literature review were required to comply with the National Environmental Protection Act, or NEPA, (Public Law 91-190), the Historic Preservation Act of 1966, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40.

The project area was surveyed on June 27 and 29, 1994, by Stephen T. Mocas, Assistant Staff Archaeologist, and Mike Siefring, technical assistant. A total of 10.5 person hours were spent in the survey of the proposed borrow areas. One artifact and one possible artifact were collected in this survey, but no sites were identified. The artifacts and

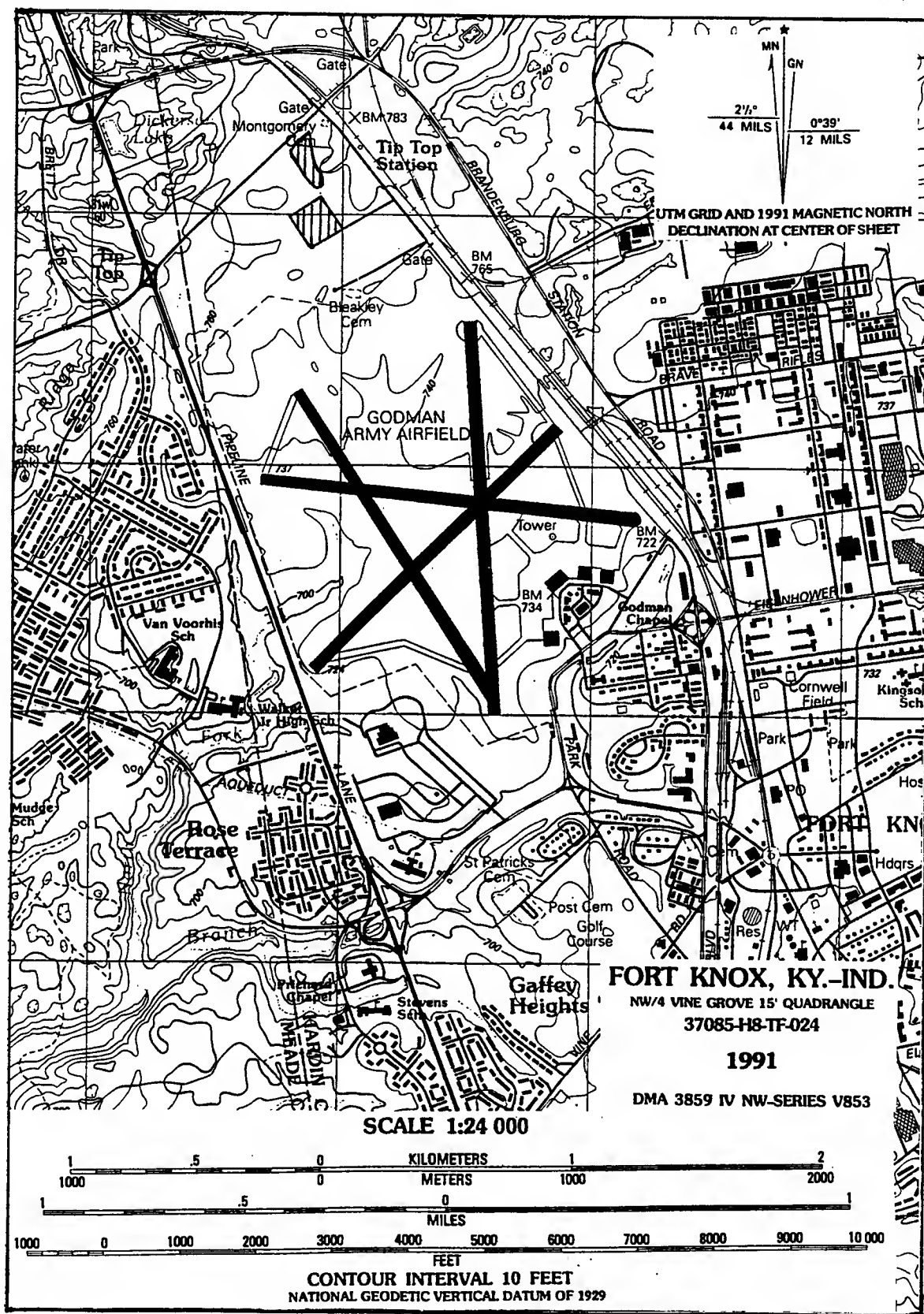


Figure 1. Location of Project Area.

associated documentation of this project will be curated at the University of Louisville Program of Archaeology, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of the documentation will be stored at the Directorate of Public Works (DPW), U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky.

## II. PREVIOUS RESEARCH

A number of cultural resource management (CRM) projects have been conducted on the Fort Knox installation. Numerous projects also have been conducted in the portions of Bullitt, Meade, and Hardin Counties outside the installation. O'Malley et al. (1980) provide an in-depth discussion of research in Bullitt, Hardin, and Meade counties through 1979, and Schenian and Mocas (1992) summarize the research which has taken place since the O'Malley et al. (1980) study. This section will focus on the projects which have been conducted on the installation and within the vicinity of the current project area.

There are 112 Hunting Areas on the Fort Knox installation. O'Malley et al. (1980) surveyed one-quarter of each of the 96 hunting areas which did not contain grenade ranges. O'Malley et al. (1980) recorded 415 sites (15Bu295-15Bu410, 15Hd109-15Hd294, and 15Md103-15Md242). Some of these sites were recorded outside the official survey areas, discovered while gaining access to the selected survey areas from the closest access road, and some sites are isolated finds. O'Malley et al. (1980) did not formally evaluate the National Register status of any of the sites inspected, although opinions are offered on many of the site forms. The purpose of the O'Malley et al. (1980) study was to provide a preliminary inventory of portions of the installation and to develop a database for the predictive modeling of site locations on the installation, and not to evaluate sites for a task-specific construction project. Holmberg (1991) prepared an archival study on the four mill sites (15Md164, 15Md176, 15Md185, and Grahamton) recorded by O'Malley et al. (1980) in the Meade County section of the base. Holmberg's (1991) study includes an appendix (Ball 1991a) delimiting a scope of services for the testing of the mill sites. This testing has not yet been conducted.

A number of projects have been conducted in conjunction with proposed timber harvests. Bush et al. (1988) revisited 15Bu319 and recorded 15Hd438-15Hd446 and 15Bu485-15Bu491 in their survey of timber areas in Hunting Areas (HAs) 41, 42, and 52. Myers (1990) surveyed 287 acres in HA 95, recording 15Bu495-15Bu502, and describing modern house and garbage dump sites. Mueller (1991) surveyed 270 acres in HA 1,



revisiting 15Md11, 15Md152, and 15Md159, and recording 15Md322-15Md325, two historic cemeteries, five prehistoric isolated finds, and three modern structures. Schenian and Mocas (1992) surveyed 600 acres and attempted to relocate and flag previously recorded sites in an additional 300 acres. Their project areas consisted of 14 timber parcels located in HA 13, 74, 76-78, 81-84, and 88-90. This survey resulted in the recording of 15Hd462-15Hd464, 15Md326, and one isolated find, and the revisiting of 15Hd140. Attempts were made to relocate 15Hd18, 15Hd113, and 15Hd139, but were unsuccessful. Ruple (1992b) revisited 15Md152, 15Md153, and 15Md322 in HA 1. Ruple (1992a) revisited 15Hd184, 15Hd186, and 15Hd249, and made an unsuccessful attempt to relocate 15Hd248, in order to flag avoidance boundaries around the sites in Hunting Area 90 in preparation for logging activities in conjunction with the clearing of the Highway 313 easement. Ruple (1993a) surveyed all 813 acres comprising Hunting Area 4 in preparation for timber harvests in scattered parcels within the Hunting Area.

The improvement of facilities on the Fort Knox installation has resulted in several CRM studies. Sorensen and Ison (1979) surveyed a proposed telephone building expansion site and access road in the cantonment area, recording no sites. Sussenbach (1990) surveyed three weather radar installation sites, in Hunting Area 23, discovering one prehistoric isolated find. Ruple (1993b) surveyed approximately 10 acres in the cantonment area for a shoreline maintenance project, encountering no sites. Mocas (1993) reported on the examination of approximately 165 acres in and around a proposed landfill and borrow area. Mocas (1994a) surveyed a 69.7 acre area around a proposed sports complex and 2.7 acres around a proposed water tower and along a pipeline in the cantonment (Mocas 1994d), encountering no archaeological sites. Schenian and Mocas (1994b) surveyed 132.2 acres in and around the present Prichard Place housing area as part of the proposed replacement project and recorded only one prehistoric isolated find.

The development, expansion, or improvement of training areas has resulted in a number of CRM studies. Driskell and O'Malley (1979) surveyed the Wilcox Gunnery Range, recording sites 15Bu393-15Bu397. Schenian (1991) surveyed 116 acres in portions of HA 17, 30, and 41, in conjunction with the Fort Dix realignment, re-examining 15Bu303, and recording 15Bu492, 15Hd459, and two prehistoric isolated finds. Hemberger (1991) also surveyed approximately 405 acres in seven construction sites in HA 17, 24, 31, 32, 34, and 54, in conjunction with the Fort Dix realignment. This study recorded 15Hd461 and 15Bu504, revisited 15Bu299 and 15Bu385, and the unsuccessful attempted to relocate 15Hd274. Hemberger (1991) surveyed a total of 126 acres in four proposed construction areas in the Yano Tank Range, in HA 93, recording 15Hd460, revisiting 15Hd178, 15Hd182, and 15Hd282, and unsuccessfully attempting to relocate 15Hd283. Hemberger

(1992) surveyed a 7.5 acre borrow area in HA 24, proposed to be used for the consolidation and improvement of two training ranges, and encountered no sites.

Schenian and Mocas (1993) surveyed a total of 330 acres in 11 rehab areas in TA 3, 6, and 8-11. The survey resulted in the revisiting of 15Md143, 15Md154, 15Md163, and 15Md175, the recording of 15Hd482-15Hd487, 15Md336-15Md342, and five isolated finds, and the unsuccessful attempt to relocate 15Hd17. The Fort Knox CRM staff (Schenian 1994a; Mocas 1994c) surveyed borrow pits for berm repair on the Yano Range, recording no sites in the Schenian 1994a study and 15Bu524-15Bu527 in the Mocas 1994c study. The CRM staff recorded no sites in a survey of a proposed wetlands replacement on the Yano Range (Schenian 1994b), and reported one historic farmstead, 15Hd491, in the proposed rehab area in HA 57 (Schenian 1994c).

In conjunction with land sales, Ball (1987) surveyed approximately 196 acres in the Bullitt County portion of Fort Knox, recording sites 15Bu479-15Bu481 and describing one post-1950, or modern, house foundation. Ball (1991b) also surveyed a 19 acre tract near Radcliff prior to disposal of the tract, recording two historic/modern trash dumps which were not assigned state site numbers. Hale (1981) surveyed the Otter Creek Park, recording 15Md243-15Md303. Portions of Otter Creek Park, now owned by the City of Louisville, were once part of the Fort Knox installation, but were disposed of in the 1970's.

Road construction and improvements have resulted in a number of CRM projects on the installation. McGraw (1976) surveyed the proposed U.S. 60 bridge and approaches near Otter Creek park, encountering no sites in a 2.35 mile long corridor which passes through HA 7-9, 11, and 12. Fiegall (1982) surveyed the Radcliff Industrial Park access road, including land in HA 15 as well as off the installation. He recorded 15Hd403 and 15Hd404 off the installation, and revisited 15Hd215 and 15Hd272 on the installation. Webb and Brockington (1986) surveyed the 4.75 mile long Kentucky Highway 1638 realignment corridor, which included portions of HA 5 and 7-10. They revisited 15Md176, and 15Md182-15Md185, and recorded 15Md306, 15Md307, and 15Md309. Sites 15Md176, 15Md182, 15Md183, and 15Md307 were all parts of the former town of Garnettsville. The latter three sites were tested (Wheaton 1982), but 15Md176 was not tested because it fell outside the 1638 realignment easement.

DiBlasi (1986) surveyed 14 alternative alignments of the approximately 20 km (12.4 miles) long Kentucky Highway 313 corridor, which includes portions of HA 80-83 and 90, as well as land outside the installation. A total of 27 sites (15Hd406-15Hd430 outside the installation, and 15Hd135, 15Hd184, 15Hd186, 15Hd248, 15Hd249, 15Hd253, 15Hd431, and 15Hd432 on the installation), some previously recorded, were

located in the survey corridor. Hixon (1992) tested 15Hd423 and 15Hd426, and archaeologists from Wilbur Smith Associates tested six sites on the installation, including 15Hd249 and 15Hd253 (Fenton 1993: personal communication to Schenian).

A recent survey of proposed borrow pits for the Yano-Cedar Creek Road improvements (Mocas 1994b) resulted in the recording of 15Hd489 and 15Hd490, the revisiting of 15Hd120 and 15Hd121, and the unsuccessful attempt to relocate 15Hd246. Schenian and Mocas (1994a) located prehistoric site 15Hd488 during a survey of 1.7 acres of proposed borrow area for the Cedar Creek Airstrip. Mocas (1994e) found no sites in the survey area surrounding a culvert replacement along Mud Run.

In addition to the CRM projects, several sites have been recorded on the installation in non-CRM contexts. Funkhouser and Webb (1932) published a catalog of archaeological sites in the state, with the information gained primarily through correspondence with amateur archaeologists, collectors, and local historians, and included the description of two sites now on the installation. These are 15Md10 and 15Md11, both mounds or mound groups (Funkhouser and Webb 1932: 281). Lee Hanson recorded 15Hd17 and 15Hd18, while attending ROTC training camp at Fort Knox in 1961 (Hanson 1961a, 1961b; Dr. R. Berle Clay 1991: personal communication). The wife of a soldier stationed at Fort Knox partially excavated 15Hd273, a mound in Hunting Area 6, in 1955 (Anonymous 1955).

Of greatest relevance to the current survey is the Schenian and Mocas 1993 study of the area directly northwest of the project area, Ruple's 1993b Dickerson Lake survey, directly to the north of the project area, and the O'Malley et al. (1980) survey of portions of Hunting Area 19 to the northeast and Hunting Area 8 to the northwest of the project area. No sites are recorded within a 1.5 km radius of the project area. No archaeological sites or standing structures listed on or eligible for listing on the National Register of Historic Places are located in or immediately adjacent to the current project areas.

### III. SURVEY PREDICTIONS

Based on previous archaeological research in the area, the history of settlement, and the environmental setting of the project area, the following results were expected:

- 1) The 1919 Camp Knox land acquisition map did not indicate any historical houses or outbuildings in the project area.

- 2) The rise above the shallow drainage appeared to be a plausible location for habitation or specialized activity, but no permanent sources of water were apparent.

#### IV. SETTING AND FIELD METHODS

The proposed borrow areas are located in the Plain section of the Pennyryle cultural landscape. The project area lies in the Mississippian Plateau physiographic region of Kentucky (McGrain and Currens 1978:35) on a relatively level portion of the undulating karstic plain, which is riddled with sinkholes and has little above ground drainage. The only drainage in the project area is a shallow ephemeral stream, though small seeps appeared to have been present prior to recent land alteration. Elevations in the project area range from 760 to 770 feet. Soils are classified as Crider-Vertrees-Nicholson soil association (Arms et al. 1979: General Soil Map).

The western and northern boundaries of the northern proposed borrow area (Figures B-1 and B-2) was formed by a woodline. The southern and eastern boundaries are the gravel road at the base of the berm. The southern proposed borrow area is bounded by a service road on the south, a woodline on the east and north, and an arbitrary line on the west side.

Since the ground surface was obscured by high broom sedge throughout the project area, the proposed borrow areas were disked at 10 m intervals to improve visibility, and the disked strips (each approximately 3 wide) were examined for cultural materials. Because the property had been cultivated farmland prior to Army acquisition, this disking would not further impact cultural deposits, if any existed. The disked strips provided the only good visibility (nearly 100 percent). The project areas were first walked the day the area was disked, and then high potential areas were reinspected two days later, following a rain.

When each of the isolated finds (one biface fragment and one possible chert flake) was discovered, the find vicinity was walked at 2 m intervals for a distance of at least 20 m from the find, and large dirt clods within the closely inspected area were broken up with shovels. Shovel probes were excavated in the find locations (Figure B-3) and at a distance of 10 m in the cardinal directions. The shovel test fill was screened through 6 mm mesh hardware cloth. Additional shovel probes were excavated in other portions of the project areas with a high potential for cultural activities and/or to ascertain the extent and method of prior disturbance. Field observation during the current study indicated that much of the area was disturbed, with no likelihood of

intact deposits, as a result of the construction of the berms since Army acquisition of the property.

Other than the two isolated finds, no other cultural materials were observed in the project area. Shovel probes revealed no intact historic or prehistoric deposits or potentially intact cultural deposits.

#### V. CONCLUSIONS AND RECOMMENDATIONS

The Phase I literature search of the two proposed top-soil borrow areas revealed that the project area had not been previously inspected. The entire project area was field inspected in the current study. The inspection of this area resulted in the discovery of one biface fragment and one chert flake of questionable cultural derivation. Isolated finds are not eligible for the National Register of Historic Places. No further archaeological research is recommended for the isolated find locations. It is recommended that the installation be permitted to borrow the project area as proposed.

In the remote possibility that archaeological materials are discovered during earthmoving activities all activity in the vicinity of the finds must cease and the State Historic Preservation Officer (502-564-6661) and the DPW Cultural Resource Management Branch (502-624-6581) should be contacted, so a representative of those agencies may evaluate the materials. Also, if human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

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  - 1994c A Phase I Archaeological Survey of the Fall 1994 Rehab Areas on the Fort Knox Military Reservation, Meade County, Kentucky. Directorate of Public Works, Fort Knox.
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- 1979 A Cultural Resource Reconnaissance of the Proposed South Central Bell Building Expansion and Access Road Construction, Fort Knox, Kentucky. Archaeological Report No. 17, Department of Anthropology, University of Kentucky
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- Webb, Paul A., and Paul E. Brockington, Jr.
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- 1987 Archaeological Testing at Garnettsville, Kentucky. Kentucky Highway 1638 Alignment. Garrow & Associates, Atlanta.

APPENDIX A.  
RESUMES OF KEY PERSONNEL

Pamela A. Schenian  
Staff Archeologist and Project Principal Investigator

Office Address: Directorate of Public Works  
ATTN: ATZK-DPW (Schenian)  
U.S. Army Armor Center and Fort Knox  
Fort Knox, Kentucky 40121-5000  
Phone: (502) 624-6581

Date and Place of Birth: January 1, 1959; Waukesha, WI.

Present Position: J.M. Waller & Associates/Fort Knox Staff  
Archeologist and Cultural Resource Manager

Education:

A.B.D. in Anthropology, Northwestern University, 1984.  
M.A. in Anthropology, Northwestern University, 1982.  
A.B. in Anthropology, Bryn Mawr College, 1980.

Previous Employment:

Senior Staff Archeologist, Archeology Service Center,  
Department of Sociology, Anthropology, and Social Work, Mur-  
ray State University, Murray, KY, November 1991-June 1993;  
Staff Archeologist, November 1983-November 1991.

Southern Illinois University, Carbondale, IL: Field  
Technician, November-December 1985, September-October 1984.

Illinois State Museum Society, Springfield, IL: Field  
Assistant II (Supervisor), summer 1983; Field Technician,  
summer 1981.

Center for American Archeology, Kampsville, IL: Field  
Technician, summer 1982.

Department of Anthropology, Northwestern University,  
Evanston, IL: Teaching Assistant, 1981-82 academic year.

Great Lakes Archeological Research Center, Milwaukee,  
WI: Field Technician, summer 1979.

Field Research Experience:

Field experience on prehistoric and historic archaeolog-  
ical projects in the states of Illinois, Indiana, Kentucky,  
New Jersey, South Dakota, Tennessee, and Wisconsin,  
1979-present.

Professional Publications, Reports, Papers and Manuscripts:  
85 CRM contract reports on projects in Indiana, Ken-  
tucky, and Tennessee.

1 Homicide site excavation contract report prepared in  
lieu of court testimony in Illinois.

7 Papers presented at professional conferences.

5 Publications, 1 in press.

Doctoral candidacy qualifying paper: "A Theory of Indi-  
vidual Style Variation for Archeological Studies".

Manuscript submitted in partial fulfillment of the M.A.  
requirements: "Models of Environmental-Cultural Relation-  
ships: Testing with Archeological Evidence".

Stephen T. Mocas  
Assistant Staff Archaeologist

Office Address: Directorate of Public Works  
ATTN: ATZK-DPW (Mocas)  
U.S. Army Armor Center and Fort Knox  
Fort Knox, Kentucky 40121-5000  
Phone: (502) 624-6581

Present Position: University of Louisville Program of  
Archaeology/Fort Knox Assistant Staff Archeologist

Education:

Completed one year of doctoral program, Southern Illinois University, Carbondale, Illinois, 1972.  
B.A. in Anthropology, University of Louisville, 1971.

Previous Employment:

Indiana University, Bloomington, Indiana: Staff Archaeologist, September 1991-November 1993.

Murray State University, Murray Kentucky: Staff Archaeologist, November 1991-November 1993.

Jefferson Community College, Louisville, Kentucky.  
Anthropology Instructor, August 1981-December 1982.

Louisville School of Art, Louisville, Kentucky: Anthropology Instructor, January-May 1976.

University of Louisville Archaeological Survey, Louisville, Kentucky. Project Director, Field Supervisor, or Research Assistant on various projects, July 1969-January 1977.

State University of New York of Buffalo, Buffalo, New York. Senior Field Worker, June-August 1970.

Field Research Experience:

Field experience, Phase I-III, prehistoric and historic archaeological projects in the states of Illinois, Indiana, Kentucky, New York, and Tennessee, 1969-present.

Research Grants:

Six grants for fieldwork and research.

Professional Publications, Reports, Papers and Manuscripts:

3 non-contract site reports on projects

19 CRM contract reports on projects

5 Chapters in additional site reports.

4 Publications, 1 in press.

APPENDIX B.

ISOLATED FIND LOCATIONS, SITE PLANS, AND SOIL PROFILES